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Preventing Theft of Anhydrous Ammonia

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Illegal drug production and distribution is no longer just an urban problem. In March 2000, the Environmental Protection Agency (EPA) issued an alert to individuals who operate and maintain agricultural retail operations or facilities with ammonia refrigeration systems, and to farmers who store and apply anhydrous ammonia as a fertilizer. The alert discussed the increasing threat of anhydrous ammonia theft for the production of methamphetamine.

February 2000. Approximately 1,000 pounds of anhydrous ammonia were released when someone intentionally opened a valve in the middle of the night at a fertilizer dealer in Missouri. Three hundred residents had to be evacuated from their homes and two people reported respiratory problems. Ammonia theft has been almost a weekly occurrence at this facility. A law enforcement investigation is underway.

Source: EPA

What is Anhydrous Ammonia?

Anhydrous ammonia is used widely and in large quantities in the U. S. as a fertilizer for agricultural production; less than 2 percent is used for refrigeration. Anhydrous ammonia is stored under pressure as a liquid and is generally safe if handled properly. It is usually stored in large, pressurized containers at agricultural retailers and on farms. Anhydrous ammonia containers have particular specifications, as required by the Department of Transportation, to ensure that they can hold pressurized liquids and corrosive chemicals safely.

Liquefied anhydrous ammonia has a boiling point of minus 28 degrees F. At this temperature it can cause freezing burns. When pressure is released, it becomes a toxic gas, expanding 850 times when released to the air. Released anhydrous ammonia may form a dense cloud that travels along the ground instead of rising into the air and dissipating.

Anhydrous ammonia has a pungent odor and can be detected at concentrations greater than 5 parts per million (ppm). Concentrations greater than 100 ppm make most people uncomfortable. Concentrations of 300 to 500 ppm are dangerous.

Health Effects

Contact with or inhalation of anhydrous ammonia can be very harmful. Direct contact with the depressurized chemical causes severe freeze and chemical burns. Inhaling it irritates the lungs and can cause severe respiratory injury or even death. Pure anhydrous ammonia vapors can become explosive in a confined space at concentrations of 16 to 25 percent by volume.

May 1999. One person was killed when a makeshift container of anhydrous ammonia he was holding exploded. The ammonia was to be used for methamphetamine production. The death occurred while the victim and another person were driving on an interstate highway in Missouri. The driver was severely injured. A firefighter, an emergency medical technician and a bystander who had stopped to help and did not know the source of the smoke were also injured by the ammonia vapors.

Source: EPA

Theft Potential

Anhydrous ammonia is a key ingredient in the production of methamphetamine. Illegal drug manufacturers often steal it from agricultural retail operations and farms where it is stored. When sold for agricultural purposes, anhydrous ammonia is valued at $200 to $250 per ton. On the black market, however, it sells for as much as $300 per gallon. It takes only 5 gallons to produce 10 to 15 pounds of methamphetamine.

There is usually enough ammonia left in a transfer hose for a criminal to use in producing drugs. In fact, criminals often prefer to steal ammonia in small quantities, using small containers, to avoid tipping off a convenient source of the chemical.

Anhydrous ammonia theft tends to occur in waves, with thieves striking the same location several times. Thefts have occurred at such unlikely places as refrigeration systems, underground pipelines and rail cars. However, most criminals steal from above-ground tanks on farms and at agricultural dealers, where small lost quantities are not easily detected.

Theft Hazard

Criminals who steal anhydrous ammonia endanger their own lives and also cause considerable risk to the public. Thieves often damage valves and hoses on anhydrous ammonia containers and release large amounts of the chemical into the air, exposing farmers, agricultural workers and rescue workers to the toxic gas. When thefts are aborted or when thieves are overcome by the fumes, small storage containers such as bottles or tanks may be left behind; these pose a risk to anyone who comes across them and handles them.

Signs of Theft

Evidence of theft includes valves not tightly closed or that seem to have been tampered with, footprints in the soil, and tire tracks leading up to the container. Also, thieves may leave behind items such as duct tape, bicycle inner tubes, coolers, garden hoses, plastic tubing, or propane tanks normally used to fuel barbeque grills.

If you find such evidence, leave the scene immediately and contact your local law enforcement. Do not try to clean up the materials or handle containers, as they may still contain hazardous chemicals.

Researchers are studying new chemical additives that, when mixed with anhydrous ammonia, render it useless for methamphetamine production. These additives include dies, stains and other reactive agents that mark the presence of anhydrous ammonia residue on tanks that have been tampered with, leaking containers, clothing, and even skin. This technology will help detect and deter theft and make it easier for police to track down thieves and identify methamphetamine users.

Tips for Agricultural Dealers

Agricultural dealers may be approached by individuals who want to buy ammonia in small quantities to use in manufacturing illegal drugs. The Drug Enforcement Administration developed the following tips to help you identify these individuals:

- Customer cannot answer or is evasive about how the chemical will be used in agriculture.
- Customer insists on taking possession himself rather than having it delivered.
- Customer insists on paying with cash, money order or cashier's check.
- Customer is a stranger to you and unfamiliar with the area or your business.
- Customer provides suspicious business or credit information.
- Customer is vague about or resists providing personal information.
- Customer intends to fill his or her own inappropriate tank (e.g., a 20-pound propane cylinder).

To deter theft:

- Educate your employees about the theft problem.
- Store tanks in well-lit areas.
- Know your inventory so you can identify missing chemicals quickly.
- Inspect tanks each morning, especially following weekends and other periods when the facility was not occupied.
- Consider auditing your facility and setting up a plan to protect critical valves that could release anhydrous ammonia if left open.
- Consider installing valve locks or fencing, especially for unattended tanks.
- Report thefts, signs of tampering, leaks, or any unusual activity to local law enforcement officials.
- Consider installing motion-detector lights and alarms and video surveillance; establish security patrols.
- Remove hoses from storage tanks during the off-season and store them separately from the tanks.

Tips for Farmers

Effective September 1, 1999. Texas House Bill 2205 makes it a state felony to:

- Possess anhydrous ammonia in a container not designed to hold it.
- Transport anhydrous ammonia in a container not designed to transport it.
- Use, deliver or sell a container or receptacle designed and manufactured to hold anhydrous ammonia without the consent of the container's owner.
- Tamper with equipment manufactured and used to hold, apply or transport anhydrous ammonia without the consent of the equipment's owner.

To help prevent theft of anhydrous ammonia on the farm:

- Have tanks delivered as close to the time of application as possible and remove tanks immediately when the application is finished.
- Purchase locking devices for tank valves when you obtain the tank.
- Locate tanks in well-lit, secure areas where they are visible from your house and where valves are clearly visible.
- Bleed and remove hoses when not in use.
- Check tanks regularly for signs of tampering and for other tell-tale signs of illegal activity.
- Block or barricade roads and lanes leading to the tank. Post No Trespassing signs on these barricades.
- Make sure all tanks are labeled with signs that warn of hazardous chemicals.
- Consider erecting a fence or other barrier around the tank, with clearly visible warning signs.
- Place brightly colored plastic wire ties or seals between the valve wheel and the roll cage. Check regularly to see if they have been broken.
- If you discover someone near the tank, do not confront the person. Contact law enforcement immediately.
- Do not disturb a crime scene.

Accident Liability

Believe it or not, you could be sued by thieves who are injured in the process of stealing your anhydrous ammonia, unless you show the court that you took reasonable precautions. To avoid this, make sure all containers are clearly marked with the appropriate warning labels and that you have made a reasonable attempt to protect against tampering and theft.

Methamphetamine Labs

Illegal drug manufacturers sometimes set up temporary labs in remote, wooded areas on large farms. These labs are often small and mobile, allowing drug manufacturers to go undetected. Be alert to the possibility that an illegal drug lab is near. Signs include the smell of ether, 5-gallon chemical cans and propane tanks scattered about, and empty bottles or other containers. Also watch for unusual tracks and attempts to conceal them.

If you find signs of illegal activity contact law enforcement immediately. Do not disturb the scene or remove any of the items. Making methamphetamine requires highly potent chemicals. Merely touching some of them can poison a person. The leftover waste from these labs is considered a hazardous materials (or Hazmat) site. Cleanup must be done by specially trained people wearing head-to-toe protective suits and respirators.

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